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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,527	08/07/2000	Jacob C. Bortscheller	RD 27696/GLO 2 0031	3901

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EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/633,527

Applicant(s)

BORTSCHELLER ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 18-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17 drawn to, light source classified in class 313, subclass 512.
- II. Claims 18-22, drawn to method for making light source, classified in class 438, subclass 7.

Inventions of Group I and Group II are related as product and process of making it. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process. For example, the product as claimed, can be made as follows: forming the phosphor containing UV curable material on the light emitting component and then forming a light transmissive material layer disposed on the fluorescent material layer.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Scott McCollister on 06/10/02 a provisional election was made with traverse to prosecute the invention of group I, claims

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1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 9-13, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 5,959,316 to Lowery.

Regarding claim 1 Lowery discloses (column 2 lines 3-32, Figs. 1 and 2) a light source (lamp 10) comprising a light emitting component (LED 18) and a phosphor-containing material (fluorescent material 24) converting light emitted at predetermined wavelength by the LED into another wavelength (column 4 lines 4-8). The phosphor containing material has thin areas at 40 and 42 and thick area at 44 depending on the intensity of the emitted light.

Referring to claim 2 Lowery discloses (column 1 line 46) the light emitting component being light emitting diode.

Regarding claim 3 Lowery discloses (column 2 lines 17-20, column 3 lines 25-27) the phosphor-containing material (fluorescent material 24) is a viscous UV cured resin containing particles of phosphor.

Regarding claim 4 Lowery discloses (column 2 lines 10-14) that the light emitting component (LED 18) produces a blue light and the light curable material containing phosphor is UV curable resin (column 3 lines 26,27).

Regarding claim 6 Lowery discloses (column 2 line 18) YAG/Gd: Ce phosphor which is known to be yellow emitting phosphor as is evidenced by U. S. Patent 6,294,800 to Duggal et al.

Referring to claim 7 Lowery discloses (column 3 lines 6-12 Fig. 3) a layer of light transmissive material (transparent spacer 50) intermediate between the light emitting component (LED 18) and the phosphor-containing material (fluorescent material 52).

Referring to claim 9 Lowery discloses in Fig 2 that the phosphor-containing material 24 surrounds the front and the sides of the light-emitting component 18.

Regarding claim 10 Lowery discloses in Fig. 2 (column 2 lines 30,31) phosphor-containing material having a greater thickness at 44 where the intensity of light emitted is higher (being at the top of the LED 18) and less thickness (thin areas) at 40 and 42 where the intensity of light emitted is lower (being on the side of the LED 18). The rest of the claimed limitations being same as claim 1 are rejected for the same reason as claim 1 (see rejection of claim 1).

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Claim 11 recites the same limitation as of claim 2 and hence is rejected for the same reason.

Claim 12 recites the same limitation as of claim 3 and hence is rejected for the same reason.

Claim 13 recites the same limitation as of claim 4 and hence is rejected for the same reason.

Claim 15 recites the same limitation as of claim 6 and hence is rejected for the same reason.

Claim 16 recites the same limitation as of claim 7 and hence is rejected for the same reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,959,316 to Lowery .

Lowery discloses the claimed invention except for dental adhesive as UV-curable material. The selection of known materials for a known purpose is generally considered to be within the skill of the art. *In re Leshin*, 125 USPQ 416. It would have been obvious

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to use dental adhesive because the selection of known materials for a known purpose is within the skill of art.

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,959,316 to Lowery in view of U. S. Patent 5,787,104 to Kamiyama et al.

Regarding claim 8 Lowery does not exemplify the LED die attach material formed from a material curable by light emitted by the light-emitting component.

Kamiyama et al. in analogous art of semiconductor light emitting element disclose (column 13 lines 61-66 Fig.21) a die (semiconductor laser 551) mounted on a sub-mount 552 with an attach material which is UV curable resin 554. It is further noted that the UV-curable resin after being irradiated with UV light from the die 551 secures the die to the sub-mount 552.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a die attach material from a material curable by light emitted by the light emitting component for securing the light emitting component to the mount.

Claim 17 recites the same limitation as of claim 8 and hence is rejected for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art references are cited to show the state of the art with respect to UV/blue LED phosphor device.

U. S. Patent 5,813,753 to Vriens et al.

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U. S. Patent 5,962,971 to Chen

U. S. Patent 6,084,250 to Justel et al.

U. S. Patent 6,395,564 to Huang

JP 07099345 A to Matoba et al.

WO 01/69692 A1 to Keuper.

U. S. 4,801,528 to Bennett discloses binder resins used as dental adhesives for their efficient curing.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.
Sikha Roy
Patent Examiner
Art Unit 2879


MICHAEL H. DAY
PRIMARY EXAMINER